

XXIV. *Historical Memoirs, relating to the Practice of Inoculation for the Small Pox, in the British American Provinces, particularly in New England: Addressed to John Huxham, M. D. F. R. S. By Benjamin Gale, A. M.*

Read May 23, 1765. **T**HE small pox, by the vigilant execution of the laws subsisting, in the several New England colonies, hath never generally prevailed among the inhabitants, excepting in Boston, the capital town, in the province of the Massachusetts's Bay, where it has been epidemical, A. D. 1649, 1666, 1678, 1689, 1702, 1721, 1730, 1752, and at this present time, 1764, and where the success attending inoculation, after much opposition, and endeavours used to bring the same into disrepute, became incontestably evident.

In the provinces of New York, New Jersey, and Pennsylvania, the like precautions have not been taken, and the small pox has prevailed in those provinces, but more especially in the capital towns, and places adjacent, once in about six or seven years, where inoculation hath been practised with surprising success, to the preservation of the lives of many.

A. D. 1702, the inhabitants of the town of Boston were 6750 souls, at this time there died of the whites 300. A. D. 1721, the number of the inhabitants were 10,567, besides those moved out to avoid the disease; the discumbents were 5,989,

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whereof 844 died, *i. e.* near one in seven. At this time, in and about Boston, 286 were inoculated, whereof 6 died, *i. e.* about 1 in 48. This was the beginning of inoculation in New England, soon after it was first practised in London *. A. D. 1730, the discumbents were estimated at 4000, whereof about 500 died; of not 400 inoculated, 12 died, *i. e.* 1 of 33.

A. D. 1752, there was an exact account taken, by order of the magistrates of the town of Boston, and rendered upon oath (in order to remove the prejudices and objections made against inoculation) of all who had the small pox, either in the natural way or by inoculation, and of the precise number of those who died of the small pox in either way; by which account it appears that the number of those who had the distemper in the natural way, including blacks, amounted to 5,544, of which number died, including blacks, 514; the whole number inoculated, including blacks, was 2,113, of which died, including blacks, 30. At this time, all present had the small pox, except about 174; the total of residents (including 1544 negroes) being 15,734; those who fled from the small pox estimated at 1,800. Hitherto mercury had not been made use of in inoculation in Boston.

A. D. 1764, at this present writing, the small pox is prevalent in the town of Boston; by the last accounts, 3000 had recovered from inoculation, in the new method, by the use of mercury, and 5 only had died, viz. children under 5 years; so that it appears, that death without inoculation is 1 in 7 or 8;

* Dr. Douglas's Summary Hist. Vol. II. p. 395.

by inoculation without mercury, 1 in 80 or 100;
by inoculation with mercury, 1 in 800 or 1000.

The use of mercury, in the small pox, was first hinted by the learned Boerhaave, who died in 1738; this intimation was improved, and mercury introduced into practice, by physicians, in the English American colonies, about 1745.

Several American physicians claim the second glory to Boerhaave. Dr. Thomas of Virginia, and Dr. Murison of Long Island, in the province of New York, may justly have merited that honour, who have successfully practised by the use of mercury, perhaps before any other, either in Europe or America.

During the late war, the small pox was brought into divers towns, in this and the other colonies, by the return of our soldiers (employed in his majesty's service, in the pay of the New England colonies) for winter quarters, and by seamen employed in our navigation to the British islands in the West Indies, where the small pox was universally prevalent, which produced an universal concern among the inhabitants, lest the same should become general, and spread through this and the other colonies in New England. Whereupon application was made to the legislature of this colony, for liberty to inoculate for the small-pox, by the officers of our provincial troops and others, which was accordingly granted; as likewise that hospitals for that purpose might be erected, in such towns of the colony as should see cause to permit the same. However, instead of regulating such hospitals as should be erected for that purpose, by well-adapted laws, to prevent any com-

munication with these hospitals from abroad, or the subjects of inoculation leaving the same, without licence from the attending physician, unhappily that matters was left, to be regulated at the discretion of the overseers of the several towns where inoculation should be practised, which required the strictest laws, enforced by severe penalties, without which it would be impossible for the attending physician to restrain his patients, when grown impatient with confinement and a reclusive life.

From this defect, some persons left the hospitals, not being duly cleansed, and unhappily communicated the small-pox to divers persons, of which some died; whereupon the law permitting inoculation was repealed, notwithstanding three hospitals had been erected in this colony, at no inconsiderable expence, and no further attempts were made, to regulate the practice of inoculation, by measures well adapted for that purpose.

Whereupon persons engaged in trade, seamen, and youth, living in sea-port towns, and places more exposed to frequent invasions of the small-pox, resorted in great numbers to New York, in order to obtain inoculation. On this emigration of the inhabitants, and partly to prevent, but principally to secure against, the spreading of the contagion in the colony, the assembly prohibited inoculation within the limits of this colony, on very severe penalties; and in case people went into any other government to obtain it, ordered them not to return again to the colony, without first having remained out at least twenty days after leaving the hospital, or place of infection, upon the penalty of twenty pounds; and
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if after remaining out of the colony twenty days, they should unfortunately happen, either by their cloaths or otherways, to communicate the infection, they were made liable to pay, to the party injured, treble damages, and costs of suit. Thus the practice of inoculation for the small-pox stands wholly interdicted within the colony, and laid under such disadvantages and discouragements, when persons go abroad to procure it, that we are in a great measure deprived of the only method, ever discovered to the world, to escape the hazards attending that disease, which has made such havock of the human species.

Was inoculation, upon some of our small islands on the sea coast, or on some point of land, at a proper distance from inhabitants, impracticable, with safety to the inhabitants of this colony, I should not think it unreasonable wholly to suppress it ; but without all doubt it may be so regulated, as to be wholly safe, and without danger of communication ; and therefore, I think, I may justly say, to deny liberty of inoculation to persons in trade, seamen, and such as are more immediately exposed to the disease, or to lay those who would go out of the colony to obtain it under so great disadvantages, is an invasion of the natural rights of mankind, and an obstruction to their pursuing the first law of human nature.

The well-peopling the colonies, and securing our new acquisitions, are matters of great importance to our mother country, as well as to ourselves ; and the more it is effected from the colonies themselves, without transporting settlers from the kingdoms of
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Great-Britain and Ireland, the greater advantages must accrue to the manufacturers of the mother country as colonizing from the plantations will keep the price of labour at so high a rate, as will effectually prevent our engaging in manufactures, and greatly encrease the sale of British manufactures in America.

The number of the inhabitants in our old American settlements double once in twenty or twenty-five years, and in our new made settlements, once in fifteen or twenty years.

The New England colonies are better peopled than the other provinces and colonies in America, which I principally attribute to the tenure of our lands, which are held in fee-simple, according to the tenure of the Manor of East Greenwich in Kent; and I humbly conceive nothing would so much facilitate the settlement of crown lands, obtained by our new acquisitions in America, as their being granted in like manner: paying quit-rents to monopolizers of large tracts of land, is not well relished by Americans, and has in itself a natural tendency to render the defence of the country against foreign invaders, and our savage enemies, despicably infamous. A signal instance of this happened during the French war, A. D. 1745. The colony of Connecticut having just before finished the settlement of their new lands, adjoining to the Manor of Livingston, in the province of New York, being on the north-west frontiers of this colony, some sculking parties of Indians being seen in the manor aforesaid, the tenants left their settlements, which had been made almost a century before, and fled over into this country to our new-made settlements,

settlements, which then had not been made more than seven years, where they looked upon themselves as safe and secure ; a convincing proof that no men will face an enemy, like those who fight *pro aris et focis*. Our southern colonies, in particular, have been drove before a despicable enemy, like sheep ; this never was the case even in the infant state of these colonies.

The census of the inhabitants of this colony, transmitted by Governor Fitch, A. D. 1756, by order of the Lords of Trade, was 128,218 souls whites, and 3587 blacks ; that of the year 1762, 141,000 souls whites, 4590 blacks, of which 930 were Indians. The levies of our fencible men diminished the increase, so that the last seven years the colony only increased 13,000. On the peace, doubtless, the rapidity of population will recover ; and in how short a space of time, the well settling our new acquisitions may be effected, from all the American colonies collectively, I leave every one to determine ; and I cannot but think, that, whenever the state of public affairs will permit the parliament of Great Britain to advert to the peopling and securing the acquisitions made in America, they will judge it best effected, as much as may be, from her colonies in America ; and that the law prohibiting inoculation in America will be accordingly annulled, by their superintending authority, as prejudicial to the population of the colonies.

It appears from Dr. Douglass's account of the small-pox in the town of Boston, where he lived, and made critical observations, the three last times that it was epidemical there, viz. A. D. 1721, 1730,
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and 1752, that the number of persons visited with the small-pox, in the natural way, was 16047, of which 1858 died ; and that in 1752, the number of those who received the infection by inoculation, before mercury was made use of in Boston in inoculation, amounted to 2113 persons, of which 30 died (blacks in both being included) ; granting that those who had the disease in the natural way stood an equal chance for life with those who were inoculated, it appears that, in those three years, there died 1831, in the town of Boston only, for want of inoculation ; by which deaths, according to the longest term of doubling the number of inhabitants in America, in one century from those periods, the number will be diminished by 29,296, which is (from the best calculation I am able to make) a number far superior to those who came from Europe, into the New England colonies, from their first settlement, to this present day.

Various sea-port towns, as well as some inland places, have been visited with the small-pox, since the first settlement of the New England colonies, by which many have died ; perhaps, taken collectively, not more than one in four have recovered, partly owing to removing the sick, in order to prevent communicating the infection ; and partly to the want of skilful physicians, and faithful experienced nurses to attend the sick, which often obliged to make use of some of the most abandoned wretches, for want of suitable persons who had had the small-pox, to perform that service.

It is much regretted by many, that the practice of inoculation may not be tolerated, in the New England colonies, and regulated by laws, well adapted

to prevent the spreading the contagion, amongst such as do not chuse, and those whose circumstances will not permit them, to comply with the expence attending it.

The increase of mankind has been more impeded by the small-pox, than is usually imagined ; it is not the loss of one in six or eight, who die with the disease, that is chiefly to be attended to, but the accumulated loss of all the posterity, which might have descended from them, multiplied through all succeeding generations. Wherefore, perhaps, it might be thought wisdom to address the Throne for liberty to erect one hospital in each of the New England colonies for that purpose ; that those, at least, who are engaged in trade and navigation, might have the benefit of inoculation, and be exempt from the hazard of the disease, while necessarily engaged in business abroad, and not endanger their friends on their return home.

- I. Bleeding, at the first invasion of the eruptive fever, must be advantageous, when the blood is rich and dense, the cohesion of the component parts strong, the patient plethoric, and the fever inflammatory.
- II. Bleeding must be prejudicial, if the quantity of blood is below the standard of health, and ferous, the cohesion of the constituent component parts weak, and the fever low and depressed.
- III. Bleeding will not alter the state of the blood, and restore the cohesion of its constituent component parts, when broken and dissolved, consequently it will be of no service when at-

tended with hemorrhages, unless the patient be plethoric, and the hemorrhages produced by an injudicious intemperate use of hot alexipharmic medicines *.

IV. Bleeding in the small-pox will not be attended with success, when it would not be of advantage in the same species of fever in any other disease.

V. Mercurials alone are not to be relied on, in order to lessen the number of pustules, but must be prejudicial, when the blood is ferous, its texture weak, or the dissolution of its constituent component parts compleat.

A Summary of the several Methods used by the most reputable Inoculators in America.

1 Method. The subjects for inoculation are directed to a light smooth diet for 14 days preceding the operation. All salt food, spirituous liquors, butter, oil, &c. are interdicted.

℞ Calomel. ppt. 2 parts, sulph. aurat. antimon. 1 part, and with a strong solution of g. arab. f. pil.

℞ Stib. nitrat. cremor. tart. sal. polychrest. flo. sulph. p. a. m. f. pulv. refrigerans; 30 or 40 grains to adults.

* More have died in America, in the measles and small-pox, by snake-root and saffron, by the prescription of old women, both male and female, than by both these diseases, where nature has been left to herself.

℞ pulv.

℞ pulv. jallap. scammon. stib. nitrat. cremor. tartar.
p. a. m. f. pulv. cathart.

The day before inoculation, to adults, give ℞ ij of the purging powder, with 5 gr. of calomel. The night following inoculation, give 10 or 12 gr. of the antimonial pill, repeating it three nights successively. The morning after the third pill, give the cathartic powder, then repeat the antimonial pill and purge as before. The antimonial pill frequently purges and vomits the first time of taking it. Every morning, including the day of inoculation, a portion of the refrigerant powder is given, except when the cathartics are prescribed, and continued until the eruption. Phlebotomy is directed, *pro re nata*.

2 Method. ℞ Pulv. antimon. crud. ℥ vij. P. sal. nitr. ℥ iv. mis. f. pul. Deflagrate in an iron ladle, scrape off the scorixæ, and reduce it to a fine powder.

℞ Hujus pul. antim. gr. vj. calomel. ppt. gr. j. m. f. pul. To an adult give it every night at bedtime, eight nights successively (regulating the diet as mentioned above); then inoculate, and repeat the powders, till the eruptive fever comes on, unless the salival glands are affected, in which case they are to be discontinued; and upon the invasion of the eruptive fever, the general antiphlogistic method is pursued.

The third and last method I shall mention, is taken from a very famous (although I dare not say the most judicious) inoculator, and is commonly

entered upon, and the operation performed, without any regimen being previously enjoined, and often after free indulgence. This rash inoculator prescribes to adults, from 10 to 20 grains of calomel in an anodyne bolus over night; the next morning he exhibits from 30 to 40 grains of pulv. cornachin. and the day following he inoculates in the usual form. The calomel bolus is prescribed every other night, and the next morning the pulv. cornachin. until four doses of each are administered. Every other night, $\mathfrak{z}\text{ss}$ crem. tart. is boiled in milk, and the whey drank going to-bed; on the intermediate day, between the second and third bolus of calomel, the sanguine and plethoric are bled, and phlebotomy is repeated the day before the eruptive fever is expected; during this fever, the patient is kept as cool as possible; balm tea acidulated with the juice of limes, lemons, or tamarinds, is freely permitted; and if the fever runs high, bleeding is repeated *pro re nata*.

This method succeeds well with the robust, whose fibres are like those of Behemoth, and whose nerves are like brags; but I have known others, who, being of a more delicate make, and their blood of a loose texture, fell a sacrifice to this method; and others whose constitution was ruined by such an indiscriminate and injudicious use of mercury, drastic purges, and the lancet.

It may be thought unnecessary to insert my own particular method, more especially as I had opportunity to inoculate no more than 70 or 80 persons, before the practice of inoculation was wholly interdicted by the legislature of the colony.